

ARIZONA DEPARTMENT OF TRANSPORTATION  
INTERMODAL TRANSPORTATION DIVISION  
TRAFFIC DESIGN SECTION - 063R  
**OFFICE MEMO**

May 22, 2003

**TO:** Nazar Nabaty  
Contracts and Specifications – 121F

**FROM:** Arif Kazmi, P.E.  
Manager Traffic Design (Western Region)  
Traffic Group - 063R

**RE:** Department Furnished Materials for Construction Project  
95 MO 237, HX100 01C, 095-D-505  
SR 95 @ El Rodeo Road (Bullhead City)

I request approval to specify Department furnished traffic signal materials on the above referenced project. The following outlines the reasons for this request and why I believe it is in the public's best interest to make traffic signal equipment Department furnished materials. The specific materials to be furnished include all traffic signal poles and mast arms, all signal heads and mounting assemblies, all pedestrian pushbutton assemblies, the traffic controller assembly, and all luminaires. I have also included a brief discussion on the implementation of Department furnished traffic signal equipment.

**Department Furnished Justification**

I believe it is in the public interest to make traffic signal equipment Department furnished for the following reasons:

- Economies of Scale - In 1998, the Department purchased approximately twenty traffic signal controller cabinet assemblies for new construction. Virtually all of these assemblies were purchased one or two at a time. On the average, the Department purchases ten additional controller cabinet assemblies per year for maintenance. Thus, the Department is getting little or no reduction in cost generally associated with ordering materials in large quantities. If all traffic signal controller assemblies were purchased by the Department and supplied on construction projects, it is expected that there would be considerable savings on the construction side. This same concept is equally applicable to poles and signal indications. As more traffic signal materials are purchased from the Procurement contracts, it is anticipated the unit prices on those contracts would become more favorable to the State, over the long run. This would result in a net reduction in the cost of traffic signal equipment and thus benefit the taxpayer.

- **Ease of Maintenance** - Generally speaking, the fewer types of equipment you must maintain, the easier it is to maintain that equipment. This is true for training maintenance personnel and stocking replacement parts. Due to the large number of controller assemblies available on the market, it has become increasingly difficult for ADOT to provide adequate training for the maintenance of the many brands of controllers. It is also a burden on the Traffic Signal Supply Center to provide replacement parts for all the various brands of controllers, signal heads, and luminaires. Proper maintenance and adequate supplies are both critical to the proper operation of traffic signals, which in turn is critical to the safe and efficient movement of people and goods. If the Department were to supply traffic signal equipment for new construction, it would be possible to provide for a more limited number of various types of equipment on the State System, without having to resort to some other vehicle for limiting the market for these items.
- **Construction Contract Time** - Traffic signal controller cabinet assemblies and poles are, generally speaking, long lead time items. It can take as much as 90 to 120 days to obtain these items. By making these Department furnished items, it may be possible to reduce the construction contract time, and thus reduce the work load on ADOT construction personnel and reduce the time the motoring public is exposed to roadway construction delays.
- **Materials Review** - Current ADOT Standards require that all traffic signal and lighting materials installed under new construction be reviewed and approved by the design engineer. The traffic signal controller assembly, signal heads, and luminaires are often major items in the review process. The materials review process is often a costly and time-consuming effort for both the design engineer and the contractor. If traffic signal equipment were to be furnished by the Department, this would eliminate the need to review these items and thus free up the design engineer to pursue other more productive endeavors.

For these reasons, I believe it is clearly in the public interest to specify Department furnished materials on this project and respectfully request your approval to do so.

## **Implementation**

In order to implement this proposal it will be necessary to make some minor changes to the standard specifications and to make the necessary arrangements for the purchase of these construction materials by the Traffic Operations Supply Center. These two issues are discussed below.

- **Specifications and Bid Tabulation** – As you know, the ADOT Standard Specifications are structured such that the contractor is, for the most part,

responsible for both furnishing and installing all items of construction. Therefore, minor modifications are needed in sections 731 – Structural Supports and Foundations for Traffic Signal and Highway Lighting, 733 – Signal Indications and Mounting Assemblies, 734 – Traffic Controller Assembly, 735 – and 736 – Highway and Sign Lighting to address the fact these items will be Department furnished-contractor installed items. The individual pay items will be identified with unique bid item numbers and specifically noted as "Department Furnished". There are also specific requirements related to coordination with the Traffic Operations Supply Center that will apply to all materials to be furnished. These requirements will be included as an addition to Section 730 – General Requirements for Traffic Signals and Highway Lighting Systems. Our office has been working directly with Contracts and Specifications and the Traffic Operations Supply Center to ensure the specifications address the specific needs of this project.

- Traffic Operations Purchase for Construction – The Traffic Operations Supply Center maintains a number of contracts for the purchase of traffic signal equipment. The Supply Center maintains an inventory of traffic signal materials for use by the Regional Traffic Signal Shops for maintenance and minor construction. The Supply Center materials are purchased under line item 71300 in the Five-Year Highway Construction Program and accounted for under TRACS No. H5100 05C. **[ The XXC number for this account is the Fiscal Year FY plus 2.]** (It should be noted that all the materials purchased by the Supply Center are procured under the rules and regulations prescribed under Title 41 of the Arizona Revised Statutes. This is due to the fact that these materials may be used for maintenance purposes.) In order to supply materials for this construction project, it will be necessary to debit TRACS No. HX100 01C and credit H5100 05C, **[ The XXC number for this account is the Fiscal Year FY plus 2.]** to reimburse the Supply Center for the cost of the materials. The Traffic Operations Supply Center and Accounts Receivable have performed a number of transactions of this sort over the past years as part of construction change orders. However, it will be important to have sufficient money in TRACS No. HX100 01C (over the contractor's bid amount) to allow for this transfer. Therefore, as part of the detailed estimate, it will be necessary to have a line item below the bid item total for Department Furnished Materials. This line item would be similar to the one currently used for payment for DPS flaggers. Our office will provide the Department Furnished Materials cost information, based on materials cost data provided by the Supply Center. (It should be noted that there is not a one-to-one correlation between the Supply Center inventory system the C&S bid items.) Once the contractor picks-up the materials, the Supply Center will forward a job cost report to Accounts Receivable. Accounts receivable will then transfer the funds from TRACS No. HX100 01C to TRACS No. H5100 05C. **[ The XXC number for this account is the Fiscal Year FY plus 2.]** Accounts receivable shall also bill the appropriate municipality, etc. for their percentage

of the Department Furnished Materials as called for in the Intergovernmental Agreement.

In closing, I would like to say that you and your staff have been a great help in putting together the bid package for this project. It is my sincere hope that this process will go smoothly, and that the use of Department furnished materials will be more widely used in the future. If you have any questions regarding this request, I may be contacted at (602) 712-8889, or I can arrange a meeting with you to discuss this proposal.

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AK:jrm

cc: Mike Lessard – 013R  
John Markoski – 063R  
Vic Ausbun – 015R  
Marsha Bloom – 202B  
District Engineer – K600

**\*\*NOTE: This is for informational purposes only. Please delete the [ The XXC number for this account is the Fiscal Year FY plus 2.] before sending memo.**